



North Dakota
Aeronautics Commission

Executive Summary

Economic Impact of Aviation in North Dakota

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Prepared for North Dakota
Aeronautics Commission
by Flint Communications

Akerson Marketing Research, Inc.

OUR MISSION

To provide, at the highest priority, economic and technical assistance to ensure an orderly and cost-effective support system that enables the advancement of the state's aviation system.

OUR VISION

To encourage an unencumbered business climate and foster the positive evolution of the aviation industry.





A Message from Governor John Hoeven

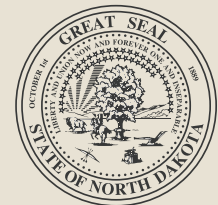
What effect does aviation have on our state? Every five years, the North Dakota Aeronautics Commission conducts extensive industry research through a federal planning grant to answer that question. The study is funded, in part, to help you make informed decisions surrounding aviation and airports.

The latest study, from 2004, shows that aviation's contribution to our state economy has grown tremendously—now \$1.25 billion. Some of the specific findings indicate a continuation of past trends. Others point to dramatic changes in the industry. Of particular interest are the following:

- **The aviation industry has diversified and grown over the past few years resulting in a 114% expenditure increase. Many segments have contributed to the growth, like leisure and business travel, which added 38% more jobs.**
- **An especially gratifying finding is the advancement of aviation manufacturing, an area we've specifically targeted for growth. Five years ago it was a small sub-sector of the Aviation industry. As of this reporting period, it has grown to twelve manufacturing firms and contributes nearly \$120 million in expenditures and 1,175 jobs.**

Beyond its direct economic impact, aviation-related spending permeates throughout communities, creating additional employment, tax revenue and spending. When the aviation industry grows, the North Dakota economy benefits greatly.

Governor John Hoeven

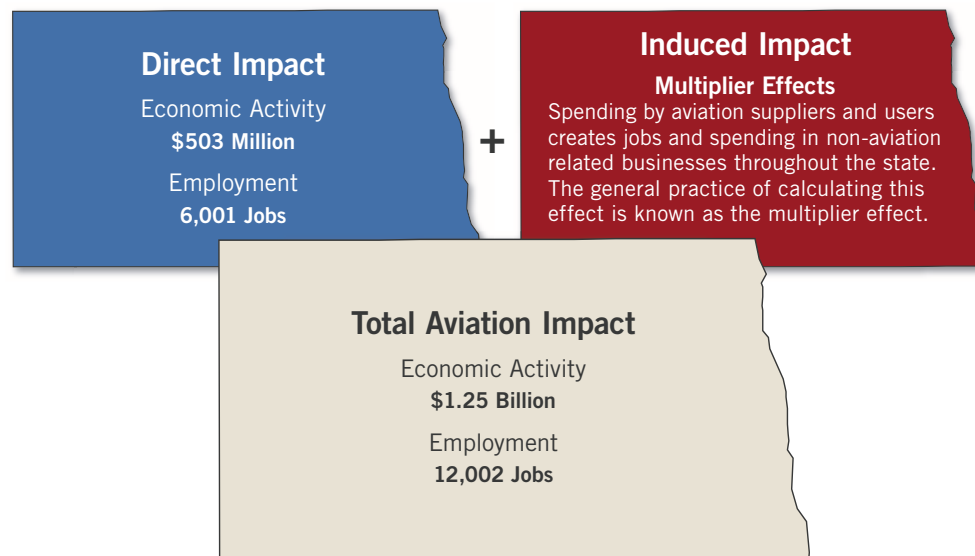


All North Dakotans Benefit from Aviation

The aviation industry directly generates revenue in North Dakota through the obvious movement of people and goods. But those who never board a plane benefit as well. Aviation contributes to medical, agricultural, energy, tourism, commercial and industrial growth throughout North Dakota.

The total economic contribution of aviation is the sum of two numbers—the direct impact and the induced impact.

- **Direct impact** is a result of aviation expenditures injected into the economy through payroll, taxes, capital expenditures and other expenses.
- **Induced impact** takes into consideration the spin-off spending from those things listed above. For example, part of an airline employee's payroll is spent on food, lodging and other expenses within a community. That successive spending is referred to as induced spending.



Measures of Economic Impacts

A look at aviation's effects on two major economic categories is a measurable indication of its overall impacts.

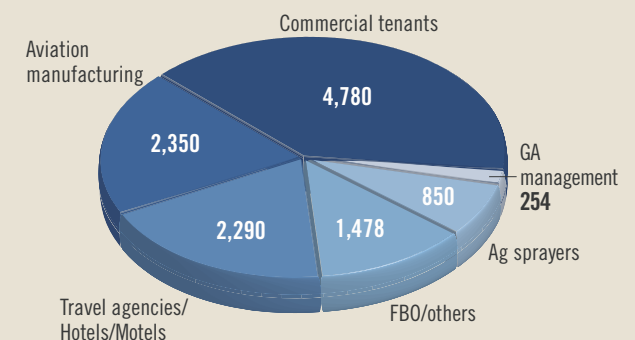
\$ Economic Expenditures—gross sales, capital expenditures, operating expenses and taxes linked to the aviation expenses of a company.

👤 Employment—the total number of full- and part-time jobs and wages that are directly or indirectly supported by aviation business in the state.

Employment

Thousands of North Dakotans are employed in aviation-related jobs, whether directly or induced. This study used standard FAA research principles to determine the number of jobs attributable to North Dakota's aviation system in 2004 is more than 12,000.

Aviation Jobs in North Dakota - 2004 Total Jobs - 12,002



Economic Activity

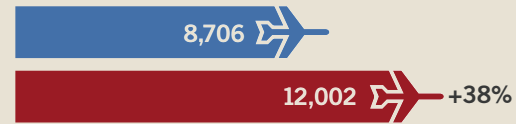
Aviation is an economic catalyst in North Dakota. In 2004, aviation contributed more than \$1.25 billion annually to the state's robust economy and provided 12,002 jobs. Those numbers represent a 114 percent increase in expenditures and a 38 percent increase in jobs in North Dakota since 1994.

North Dakota's Aviation Industry Growth

\$ Economic Activity



↑ Employment (Jobs)



✈ 1994 ✈ 2004



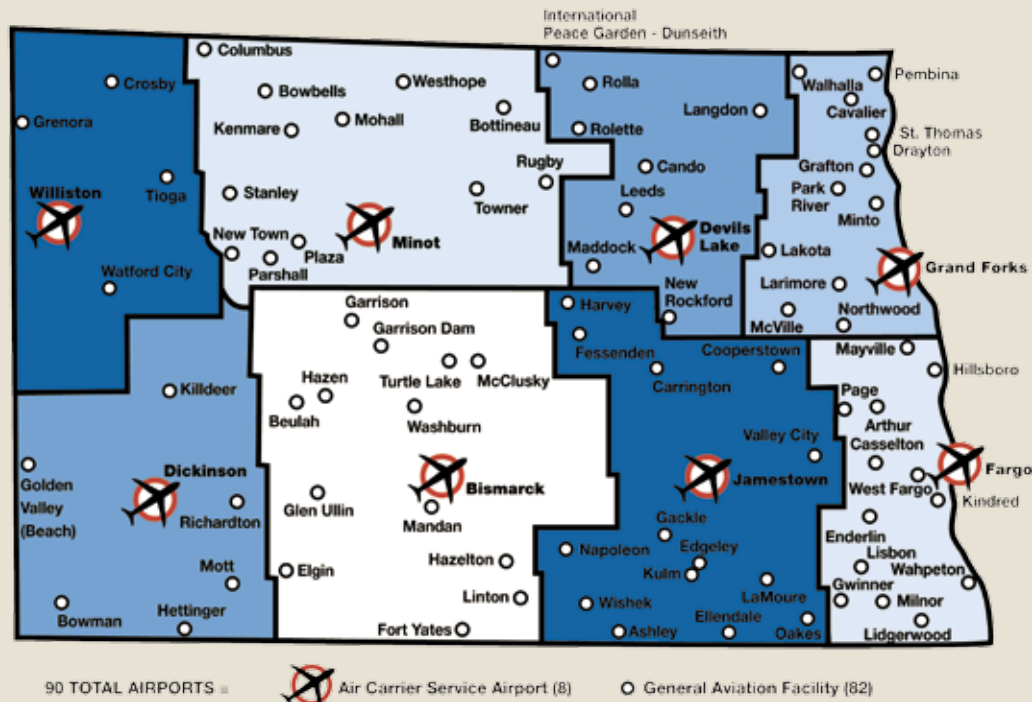
Aviation contributes more than \$1.25 billion to North Dakota's diverse economy.





Airports are more than runways and buildings. They fuel our contribution to the global economy.

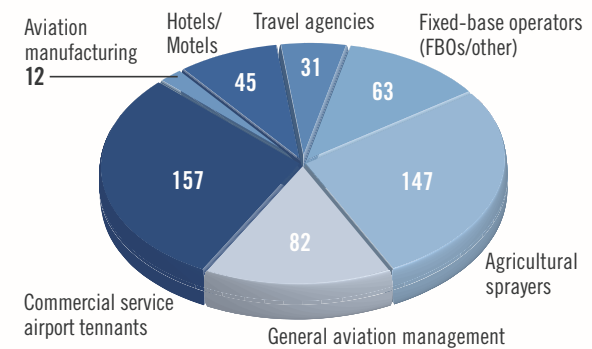
Airports are Home Base to More than 500 North Dakota Businesses



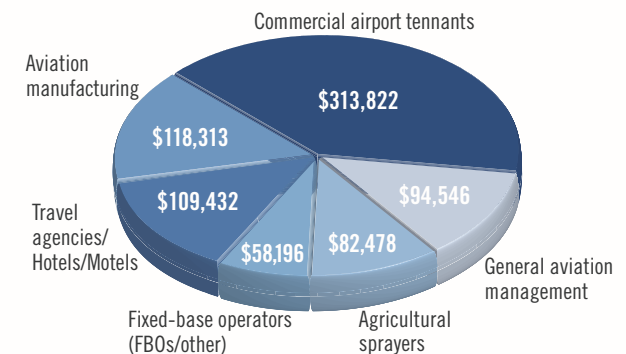
Airport Activity

North Dakota airports support the growth of industrial, energy, medical, agriculture and tourism businesses.

Aviation Business Types Total Types - 537

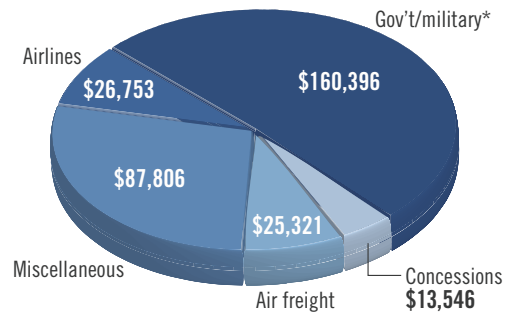


Their Economic Contribution Total (000) - \$776,787

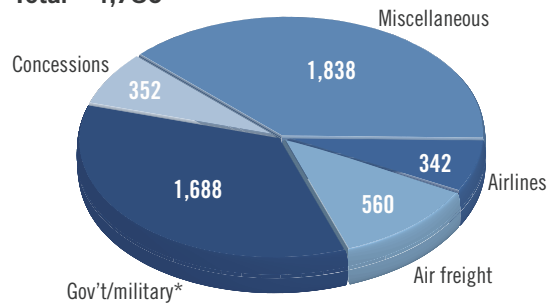


Impact of Commercial Aviation - 2004

Economic Impact Total (000) - \$313,822



Employees Total - 4,780



*This report does not include the economic impact of military bases.

Airlines

In 2004, six airlines served North Dakota's eight commercial air service airports.

- Fifty-two daily departures
- 586,000 passengers
- Major airlines—Northwest, United, Allegiant
- Regional airlines—Big Sky, Mesaba, Great Lakes



Concessions

The concessions subset encompasses rental cars, food, beverage, parking, gift/news and other tenants. Its 2004 impact included \$13.5 million and 352 employees.

Government and Military

Included in this category are state agencies, FAA airport/control tower personnel, weather service operation, TSA employees and members of the National Guard. The economic impact of North Dakota's two military bases is not included in this report.

Air Freight

FedEx, UPS, DHL and other smaller air freight companies deliver an economic impact of \$25.3 million and employ 560 people. Mail order and Internet purchases, along with U.S. Mail are flown air freight to and from North Dakota daily at the eight commercial airports.

Miscellaneous

In addition to rentals, this category includes life-saving air-medical and emergency services. Flying doctors and fixed-wing helicopter firms provide daily rural healthcare and emergency transport throughout North Dakota. Medical flights also deliver blood and organs, and transfer burn patients. Firms including Basin Electric, Montana Dakota Utilities, Bobcat Company, Ottertail Power, Applebee's, and Tharaldson Enterprises use corporate aircraft that are based on airports in North Dakota.



The commercial aviation economic contribution has soared to \$313.8 million.

Small airports contributed nearly \$120 million to their local and state economies.

General Aviation Contribution

North Dakota's airport system includes an extensive network of public-use general aviation airports—82 throughout the state. These airports supported 1,300 jobs and \$120 million of expenditures in 2004 or 10 percent of the state total impact.

Agricultural Spraying

Even with the adoption of treated and genetically enhanced seeds, agricultural spraying plays a major role in protecting North Dakota's crops. It's estimated that without the use of crop protection products, crop production may be cut by up to 50 percent. In 2004, 147 ag sprayer organizations used 283 airplanes to spray 3.3 million acres—all in an effort to keep our state's agricultural industry thriving.

\$ Economic Activity



👤 Employment (Jobs)



✈ 1994

✈ 2004

Fixed Base Operators (FBOs)

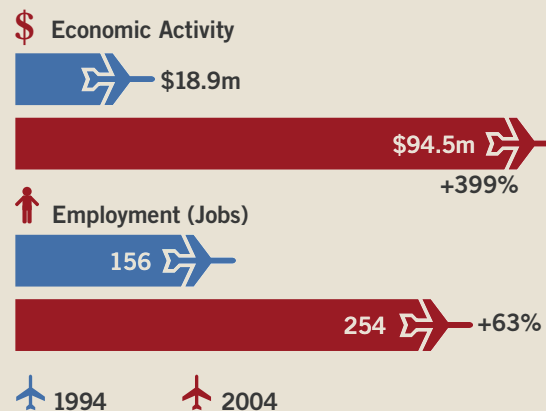
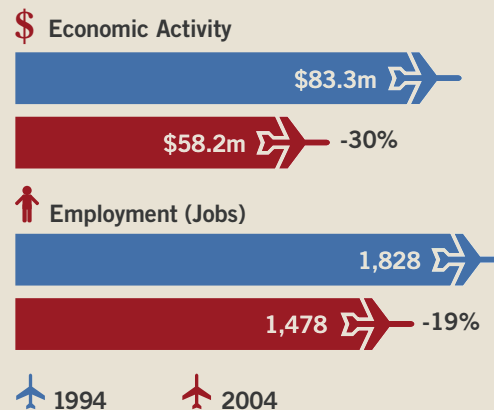
This group is a catch-all category comprised of air taxi operators, aircraft dealers, avionics and mechanics. Also included in this category are a pair of organizations that have built world-recognized businesses based in North Dakota:

University of North Dakota (UND) Center for Aerospace Sciences which employs 363 people, is a national leader in four-year degree programs in space studies, computer science and fixed-wing helicopter flight instruction. At any given time the program has more than 100 aircraft and 1,800 students training for careers in aerospace.

Weather Modification, Inc. is the largest cloud seeding company in the world, with operations across the globe. Based in North Dakota since 1961, the firm has 15 aircraft and 5 radars with over 43,000 aircraft flight-hours of experience.

General Aviation Management

In North Dakota, general aviation airport tenants are typically ag sprayers or FBOs. Sometimes these tenants also serve as the day-to-day managers of the general aviation airports. The dramatic increase in this segment's economic contributions is due, in part, to \$7.5 million annual FAA construction funds for general aviation airport entitlements.



GA Airport Uses

Business

- Customer visits, cargo
- Product and part movement
- News gathering for media outlets
- Aerial photography
- Powerline patrol

Government

- Law enforcement
- Search and rescue
- Aerial surveying
- Highway construction

Personal Use

- Travel and recreation
- Humanitarian missions

Weather

- Current information

Medical

- Delivery of medical and organ supplies
- Transport medical professionals

Cross Country Navigation for Aircraft

- Emergency landing sites from air
- Ground-based navigation aids

Education/Entertainment

- Outreach programs, teacher workshops
- Air shows

Aviation-related

- Maintenance and fueling
- Aircraft rental
- Charter and flight training

Agricultural

- Spraying and seeding
- Crop inspection
- Livestock sales
- Rain enhancement/hail reduction

Air Travel Contribution

Just a blip on the radar screen a decade ago, aviation manufacturing contributed nearly \$120 million in expenditures and supported 1,175 jobs (\$47.3 million in payroll) in 2004, or 10 percent of the state's total aviation employment.



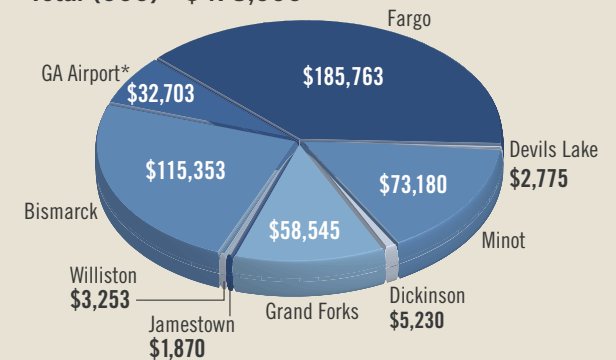
North Dakota Aviation Manufacturers

| Company | Location | Employees | About |
|---|-------------------------------|------------------------|--|
| Cirrus Design | Grand Forks | 291 (259 more planned) | Manufactures wings, fuselages and aircraft parts. |
| Dakota Air Parts | Fargo | 19 | Buys, sells and supports helicopter and fixed-wing aircraft and parts. |
| Fischer Flying Products (Jackson Manufacturing) | Edgeley | 5 | Manufactures kit planes that people build themselves. |
| Goodrich Corporation | Jamestown | 550 | World's largest air cargo systems manufacturer. |
| Hensley Aircraft | Devils Lake | 15 to 20 jobs planned | Start-up manufacturer of Wolf sport aircraft. |
| Killdeer Mountain Manufacturing | Killdeer, Hettinger, Halliday | 166 | Produces aerospace electronics for Boeing, Lockheed and Raytheon. |
| Mandaree Enterprise Corporation | Mandaree | 70 | Tribally owned manufacturer of cables, wires and panels for aircraft and drone targets. |
| Marburger Enterprises | Williston | 1 | Manufactures wing tips to enhance agricultural plane flight performance and swath width. |
| Mid-America Aviation | West Fargo | 20 | Manufactures gearboxes for fighter military planes and helicopters, and transmissions for helicopters. |
| Northrop Grumman Corporation | New Town | 95 | Leading designer, systems integrator and manufacturer of military surveillance and combat aircraft, defense electronics, and marine and space systems. |
| Odegaard Aviation | Kindred | 8 | Restorer of WWII aircraft such as the P-51 Mustang or Super Corsair. |
| Tri-State Aviation | Wahpeton | 10 | Restorer of WWII fighters and trainers. |

Air Travel Contribution

With 258,000 visitors annually, the eight commercial service airports in North Dakota are strong contributors to the state's tourism economy. Additionally, the 82 general aviation airports had over 174,000 visitors. According to surveyed airline passengers, lodging, food and beverage, entertainment, retail trade, local transportation and business expenses contributed to a statewide average expenditure of \$699 per trip, per visitor.

Air Traveler Expenditures Total (000) - \$478,000



*GA Airport - air travel visitors at 82 general aviation airports.

\$478 million
spent by air travel visitors to ND in 2004

432,457
number of air travel visitors to ND in 2004

\$699
spent per trip, per airline passenger

Travel Agencies

Travel agencies have had to adapt to a business culture of web-based ticket purchasing and decreased commissions from major air carriers. North Dakota economic development proponents have collaborated to lure national travel and tour industries to the state including American Express (formerly Rosenbluth), MLT-Northwest World Vacations and Holland America.

\$ Contribution

\$17.8m

\$104.9m +489%

Employees

698

2,150 +208%

1994

2004



Business and pleasure travel brought \$478 million to North Dakota communities.

Aviation Impact in Review

| Expenditures (\$000) | | | |
|--------------------------------|------------------|--------------------|-------------|
| Group | 1994 Total | 2004 Total | % +/- |
| Commercial Tenants | | | |
| Airlines | \$30,995 | \$26,753 | -14 |
| Concessions | \$20,908 | \$13,546 | -23 |
| Gov't/Military | \$141,146 | \$160,396 | +13 |
| Air Freight | \$20,914 | \$25,321 | +21 |
| Miscellaneous | \$1,791 | \$87,806 | +4,792 |
| Tenants Total ¹ | \$215,754 | \$313,822 | +31 |
| GA Management | \$18,943 | \$94,546 | +399 |
| Ag Sprayers | \$46,159 | \$82,478 | +77 |
| FBOs/Others | \$83,170 | \$58,196 | -30 |
| Travel Agents | \$17,873 | \$104,934 | +487 |
| Hotels/Motels | \$6,192 | \$4,509 | -37 |
| Air Travel Visitors | | | |
| Comm. Service | \$169,945 | \$445,969 | +162 |
| GA/Air Taxi | \$26,390 | \$32,703 | +24 |
| Visitor Total ¹ | \$196,335 | \$478,672 | +143 |
| Av. Mftg. ² | - | \$118,313 | - |
| Grand Total¹ | \$584,426 | \$1,255,470 | +114 |

¹ Totals may not add up due to rounding

² First year includes 2004 data

Aviation Highlights



- 42% of North Dakota's aviation income stems from air travel tourism with 1.2 million passengers annually.
- Air medical services are a life-saving part of the healthcare equation for rural North Dakota hospitals and clinics.
- Air courier services like UPS, DHL and FedEx, employ 280 North Dakotans.
- Aviation manufacturing provides 1,175 direct jobs within 12 companies.
- World-renowned UND Aerospace program uses more than 100 aircraft to train 1,800 students for careers in aerospace.
- Airports are home base for more than 500 businesses.
- Travel agency and tour operators service customers worldwide through offices in North Dakota with 1,075 direct jobs.
- World's largest selling general aviation aircraft—Cirrus—has 291 employees in our state.
- Aerial spraying continues to be an important part of North Dakota agricultural industry with over 3.3 million acres sprayed.
- World's largest air cargo systems manufacturer—Goodrich—has over 500 employees in North Dakota.
- Major businesses, utility companies, contractors and energy firms use 90 public airports daily.

Economic Impact of Aviation Study Methodology

The contribution of aviation to the North Dakota economy was calculated using accepted methods and FAA guidelines for estimating economic impacts. To the extent possible, the approach used is consistent with previous studies commissioned by the North Dakota Aeronautics Commission.

Four steps were involved in developing the methodology for this study:

- Identifying the groups to be studied
- Data tabulation and extrapolation
- Sampling procedures for these groups
- Induced impact NDSU multipliers

Methodology detail is included in the full report, “Economic Impact of Aviation in North Dakota; 2004 State Aviation System Plan Update.”

North Dakota Aeronautics Commission



Commissioners:

Front row: Maurice Cook, Member, Bismarck; Jay Lindquist, Vice Chairman, Hettinger.

Back row: Dianne Herr, Member, Turtle Lake; Robert Miller, Chairman, Casselton; Cindy Schreiber-Beck, Secretary, Wahpeton.



Staff:

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